REMARKS

The Specification and claims 1, 13, 14, 15, 17, 16, 19, 20, 22 and 23 were amended to correct clerical errors. Claims 1-32 remain pending in this application. Support for this amendment can be found in the Specification by referencing the following table:

ENTRY	SUPPORT FOR AMENDMENT
page 4, paragraph 3	page 10, line 34 through page 11, line 6
page 5, paragraph 2	page 19, line 15 through page 20, line 35
page 11, first full paragraph	page 10, line 34 through page 11, line 6
page 15, fourth full paragraph	page 13, line 23 through page 15, line 8
page 15, fifth full paragraph	page 13, line 23 through page 15, line 8
page 16, first full paragraph	page 13, line 23 through page 15, line 8
page 16, second full paragraph	page 13, line 23 through page 15, line 8
page 16, third full paragraph	page 13, line 23 through page 15, line 8
page 18, fourth full paragraph	page 16, line 23 through page 18, line 36
page 20, third full paragraph	page 19, line 19 through page 20, line 38
claim 1	page 10, line 34 through page 11, line 6
claim 13	page 13, line 23 through page 15, line 8
claim 14	page 13, line 23 through page 15, line 8
claim 15	page 13, line 23 through page 15, line 8
claim 16	page 13, line 23 through page 15, line 8
claim 17	page 13, line 23 through page 15, line 8
claim 19	page 16, line 23 through page 18, line 36
claim 20	page 16, line 23 through page 18, line 36
claim 22	page 16, line 23 through page 18, line 36
claim 23	page 19, line 15 through page 20, line 35

The claim amendments were made to put them in better form for examination, and are not submitted for the purpose of patentability or to narrow the scope of any claim elements.

Applicant respectfully submits that this application is in proper condition for a Notice of Allowance.

Respectfully submitted,

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APPENDIX A – VERSION WITH MARKINGS TO SHOW CHANGES

VERSION WITH MARKINGS TO SHOW CHANGES

On page 4, please replace paragraph 3 with the following entry:

In an embodiment of the present invention, a method for detecting a pulldown technique is disclosed. The method includes sequentially comparing adjacent pairs of frames of a video sequence to detect relatively high [frequency]values and relatively low [frequency]values of at least one frequency [components]component of said adjacent pairs of frames and determining that the video sequence was produced by a 3:2 pulldown technique when a repeating pattern of the adjacent pairs is high/low/high/low/low values. Up to this time, two separate techniques were needed to detect 2:2 pulldown sequences and 3:2 pulldown sequences. Advantageously, now only one method can be used to detect either type of pulldown sequence.

On page 5, please replace paragraph 2 with the following entry:

In an additional embodiment of the present invention, a method for detecting source-type sequence breaks in a video stream is disclosed. The method includes sequentially comparing adjacent pairs of frames of a video sequence to detect relatively high [frequency]values and relatively low [frequency]values of at least one frequency [components]component of the adjacent pairs of frames and detecting source-type sequence breaks by analyzing a pattern of the relatively high and low values of at least one frequency [components]component.

On page 11, please replace the first full paragraph with the following entry:

Restated, a method for detecting a pulldown technique is accomplished by sequentially comparing adjacent pairs of frames of a video sequence to detect relatively high [frequency]values and relatively low [frequency]values of at least one frequency [components]component (relative in terms of a low value to a high value) of the adjacent pairs of frames and determining that the video sequence was produced by a 3:2 pulldown technique when a repeating pattern of said adjacent pairs is high/low/high/low/low values. The method can also be used to determine that the video sequence was produced by a 2:2 pulldown technique when the repeating pattern is high/low/high/low values.

On page 15, please replace the fourth full paragraph with the following entry:

For a 2:2 pulldown technique, the threshold detection level is determined by

determining that the pulldown technique is 2:2, obtaining a first, second and third previous frequency detection value and [calculating a new]dynamically adjusting a threshold detection level based on the first, second and third previous frequency detection values.

On page 15, please replace the fifth full paragraph with the following entry:

[The]Dynamically adjusting the threshold detection level includes calculating a new threshold detection level [comprises]by verifying that a 2:2 pulldown lock has not occurred, verifying that the first and third previous frequency detection values are low, obtaining an average of the first and third previous frequency detection values, obtaining the magnitude of the difference between the average and the second previous frequency detection value, dividing by 2 and adding to an immediately preceding calculated threshold [value]level.

On page 16, please replace the first full paragraph with the following entry:

[The calculation]Dynamically adjusting the threshold detection level includes calculating [of the]a new threshold detection level is [comprised of]determined by verifying that a 2:2 pulldown lock has not occurred, verifying that the first and third previous frequency detection values are high, obtaining an average of the first and third previous frequency detection values, obtaining the magnitude of the difference between the average and the second previous frequency detection value, dividing by 2 and subtracting from an immediately preceding calculated threshold [value]level.

On page 16, please replace the second full paragraph with the following entry:

[The calculation]Dynamically adjusting the threshold detection level includes calculating [of the]a new threshold detection level is [comprised of]determined by verifying that a 2:2 pulldown lock has occurred, verifying that the first and third previous frequency detection values are low, obtaining an average of the first and third previous frequency detection values, obtaining the magnitude of the difference between the average and the second previous frequency detection value dividing by 4 and adding to an immediately preceding calculated threshold [value]level.

On page 16, please replace the third full paragraph with the following entry:

[The calculation]Dynamically adjusting the threshold detection level includes calculating [of the]a new threshold detection level is [comprised of]determined by verifying that a 2:2 pulldown lock has occurred, verifying that the first and third previous frequency detection values are high, obtaining an average of the first and third previous frequency detection values, obtaining the magnitude of the difference between the average and the second previous frequency detection value, dividing by 4 and subtracting from an immediately preceding calculated threshold [value]level.

On page 18, please replace the fourth full paragraph with the following entry:

It will therefore be appreciated that a method for processing a progressive source interlaced video stream includes deinterlacing the interlaced video stream to create a progressive video stream, determining a confidence level (quality level) with respect to the progressive video stream and post processing the progressive video stream based upon the determined confidence level. When the confidence level is below about a first threshold, no action is taken to improve the video sequence. When the confidence level is above about [a]the first threshold but below about a second threshold, an interlace artifact removal process is initiated. When the confidence level is above the second threshold, the video source is processed as a non-progressive source. The [post processing]confidence level is determined by combining at least two of the following elements: a field difference pair history value, a field difference noise filter low threshold value, a source type transition type count value, a sequence of frequency detection values and a ratio of high to low frequency detection values.

On page 20, please replace the third full paragraph with the following entry:

It will therefore be appreciated that a method for detecting source-type sequence breaks in a video stream includes sequentially comparing adjacent pairs of frames of a video sequence to detect relatively high [frequency]values and relatively low [frequency]values of at least one frequency (relative in relation to each other) [components]component of the adjacent pairs of frames and detecting source-type sequence breaks by analyzing a pattern of the relatively high and low values of at least one frequency [components]component. The detection of source-type sequence breaks comprises obtaining a frequency detection value, calculating a sum of a number

of previous frequency detection values, determining that a source-type sequence break has occurred if the frequency detection value is greater in magnitude than the sum and the frequency detection value is greater than a given threshold. The detection of source-type sequence breaks comprises obtaining a frequency detection value, obtaining a field difference value, calculating a sum of a number of previous field difference values, comparing the frequency detection value with two previous frequency detection values and determining that a source-type sequence break has occurred if the field difference value is larger than the sum and larger than a given threshold and the frequency detection is larger than the two previous frequency detection values. The detection of source-type sequence breaks comprises obtaining a high magnitude frequency detection value, obtaining a low magnitude frequency detection value, calculating an average of a number of previous frequency detection values, comparing the high magnitude and low magnitude frequency detection values with the average and determining that a source-type sequence break has occurred if the high magnitude frequency value is less than the average or the low magnitude frequency detection value is greater than the average.

APPENDIX B– VERSION WITH MARKINGS TO SHOW CHANGES

VERSION WITH MARKINGS TO SHOW CHANGES

1. A method for detecting a pulldown technique comprising:

sequentially comparing adjacent pairs of frames of a video sequence to detect relatively high [frequency]values and relatively low [frequency]values of at least one frequency [components]component of said adjacent pairs of frames; and

determining that the video sequence was produced by a 3:2 pulldown technique when a repeating pattern of said adjacent pairs is high/low/high/low/low values.

13. [The method of claim 9 wherein the threshold detection level is determined by:]A method for dynamically determining threshold detection levels in a pulldown detection system comprising:

determining that the pulldown technique is 2:2;

obtaining a first, second and third previous frequency detection value; and

[calculating a new]dynamically adjusting a threshold detection level based on the first, second and third previous frequency detection values.

14. The method of claim 13 wherein [the]dynamically adjusting said threshold detection level includes calculating [of the]a new threshold detection level [comprising]by:

verifying that a 2:2 pulldown lock has not occurred;

verifying that the first and third previous frequency detection values are low;

obtaining an average of the first and third previous frequency detection values;

obtaining the magnitude of the difference between the average and the second previous frequency detection value;

dividing by 2 ; and

adding to an immediately preceding calculated threshold [value]level.

15. The method of claim 13 wherein [the]dynamically adjusting said threshold detection level includes calculating [of the]a new threshold detection level [comprising]by:

verifying that a 2:2 pulldown lock has not occurred;

verifying that the first and third previous frequency detection values are high;

obtaining an average of the first and third previous frequency detection values;

obtaining the magnitude of the difference between the average and the second previous frequency detection value;

dividing by 2 ; and

subtracting from an immediately preceding calculated threshold [value]level.

16. The method of claim 13 wherein [the]dynamically adjusting said threshold detection level includes calculating [of the]a new threshold detection level [comprising]by:

verifying that a 2:2 pulldown lock has occurred;

verifying that the first and third previous frequency detection values are low;

obtaining an average of the first and third previous frequency detection values;

obtaining the magnitude of the difference between the average and the second previous frequency detection value;

dividing by 4 ; and

adding to an immediately preceding calculated threshold [value]level.

17. The method of claim 13 wherein [the]dynamically adjusting said threshold detection level includes calculating [of the]a new threshold detection level [comprising]by:

verifying that a 2:2 pulldown lock has occurred;

verifying that the first and third previous frequency detection values are high;

obtaining an average of the first and third previous frequency detection values;

obtaining the magnitude of the difference between the average and the second previous frequency detection value;

dividing by 4 ; and

subtracting from an immediately preceding calculated threshold [value]level.

19. The method of claim 18 wherein said confidence level is below about [said]a first threshold, no action is taken to improve the video sequence.

20. The method of claim 19 wherein said confidence level is above about [a]said first threshold but below about a second threshold, an interlace artifact removal process is initiated.

22. The method of claim 18 where said [post processing]confidence level is determined by combining at least two of the following elements:

a field difference pair history value;

a field difference noise filter low threshold value;

a source type transition type count value;

a sequence of frequency detection values; and

a ratio of high to low frequency detection values.

23. A method for detecting source-type sequence breaks in a video stream comprising:

sequentially comparing adjacent pairs of frames of a video sequence to detect relatively high [frequency]values and relatively low [frequency]values of at least one frequency [components]component of said adjacent pairs of frames; and

detecting source-type sequence breaks by analyzing a pattern of said relatively high and low values of at least one frequency [components]component.